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HOW TO CONTROL SOUTHERN UPLAND HARDWOODS WITH AMMATE

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WHY USE AMMATE?

Landowners in the upland regions of the South are finding Ammate an effective and economical way of getting rid of blackjack oak and other undesirable hardwoods that may be crowding valuable trees out of the forest (fig. 1), reducing the grass in woodland pasture, or otherwise getting in the way.

Ammate (trade name for 80 percent ammonium sulfamate), when properly used, kills trees faster than girdling, and treated trees sprout less than those that are girdled or chopped down. Stands of sprouts can be killed by spraying with a strong water solution of Ammate. Ammate is poisonous only to plants. This gives it a big advantage over sodium arsenite, which is an effective tree killer but a deadly poison to animals and humans.

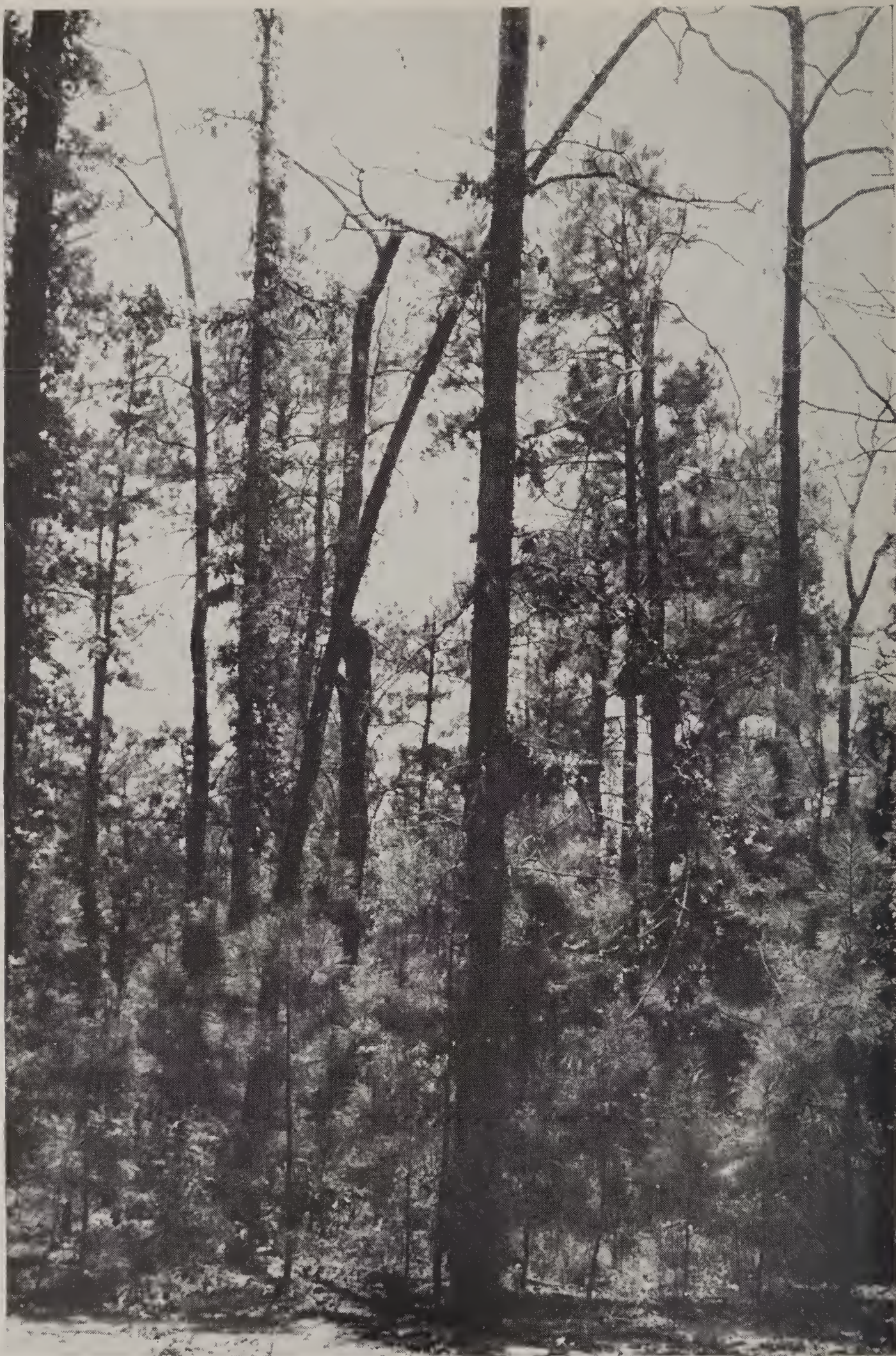
The Southern Forest Experiment Station started tests with Ammate as a poison for blackjack oak in October 1944. Since then, Ammate has been tried in different forms, quantities, and seasons, and compared with sodium arsenite, 2,4-D, Diesel fuel, and other poisons. Most blackjack oaks were killed when Ammate was applied in the strengths and by the methods recommended. Trees treated with Ammate sprouted less than those poisoned with sodium arsenite. 2,4-D and its salts reacted more slowly and were more variable in effect than Ammate. Ammate spray proved effective on stands of sprouts and brush.

On the basis of these tests, Ammate is recommended as the most effective of the chemicals studied thus far for killing blackjack oak and many other upland hardwood species. However, sodium arsenite works better than Ammate on bitter pecan (water hickory) and other bottom-land hardwoods.

ON TREES OVER 3 INCHES IN DIAMETER

Table 1 summarizes the two methods of applying Ammate that are most often used on trees over 3 inches d. b. h. diameter at breast height (4½ feet above the ground): (1) placing Ammate crystals in cups (notches) in the tree trunk, and (2) pouring Ammate solution into a frill chopped into the trunk.

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FIGURE 1.—Valuable young loblolly pines making fast growth after worthless overtopping hardwoods were poisoned. In many southern forests, the growth of pine and good hardwoods would be greatly speeded by removal of “weed trees” of poor form and unsalable species.

TABLE 1.—*Two methods of killing trees with Ammate*

Ammate crystals in cups	Ammate solution in frills
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WHERE

Recommended where complete kill with least sprouting is necessary, as in clearing land for pasture and in timber stand improvement for longleaf pine in the grass stage.	Suggested where moderate sprouting is permissible, as in timber stand improvement to release desirable trees at least 1 or 2 feet high. Better than the cup method for trees over 12 inches d. b. h.
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HOW

Put 1 level tablespoonful of Ammate crystals into each freshly cut notch or cup. Cups at the base of the tree should be 6 inches apart from edge to edge. Two are enough for trees up to 6 inches d.b.h.; an extra cup is needed for every 2-inch increase in tree diameter. If the cups are 2 or 3 feet above ground, they should be only 4 inches apart.	Mix not less than 2 pounds (19.3 percent solution) and preferably 4 pounds (32.4 percent solution) of Ammate crystals in each gallon of water. Ammate solution is almost colorless. To help tell treated frills from untreated ones, many users mix in enough red dye to stain the wood in the frill. Pour solution into freshly cut frill, saturating the frill without wasting solution.
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SPECIES

Blackjack oak, sweetgum, blackgum, elm, ash, bay, willow, red oak, post oak, willow oak, persimmon, and small hickory. Use a double dose for large hickory, beech, and white oak.	Blackjack oak, red oak, post oak, and willow oak. Unsatisfactory with sweetgum and hickory. Experience is lacking with other species.
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WHEN

Winter best, but effective during any season.	Winter, spring, and summer.
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EQUIPMENT

Ax, container for Ammate crystals, tablespoon, and Ammate.	Ax, gallon oil can with small spout or tube for pouring solution into the frills, container for mixing, dye, Ammate, and water.
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CREW

A three-man crew, two to make cups and one to apply the poison, is efficient.	A four-man crew is efficient, with three men making frills and one applying Ammate.
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TABLE 1.—*Two methods of killing trees with Ammate*—Continued

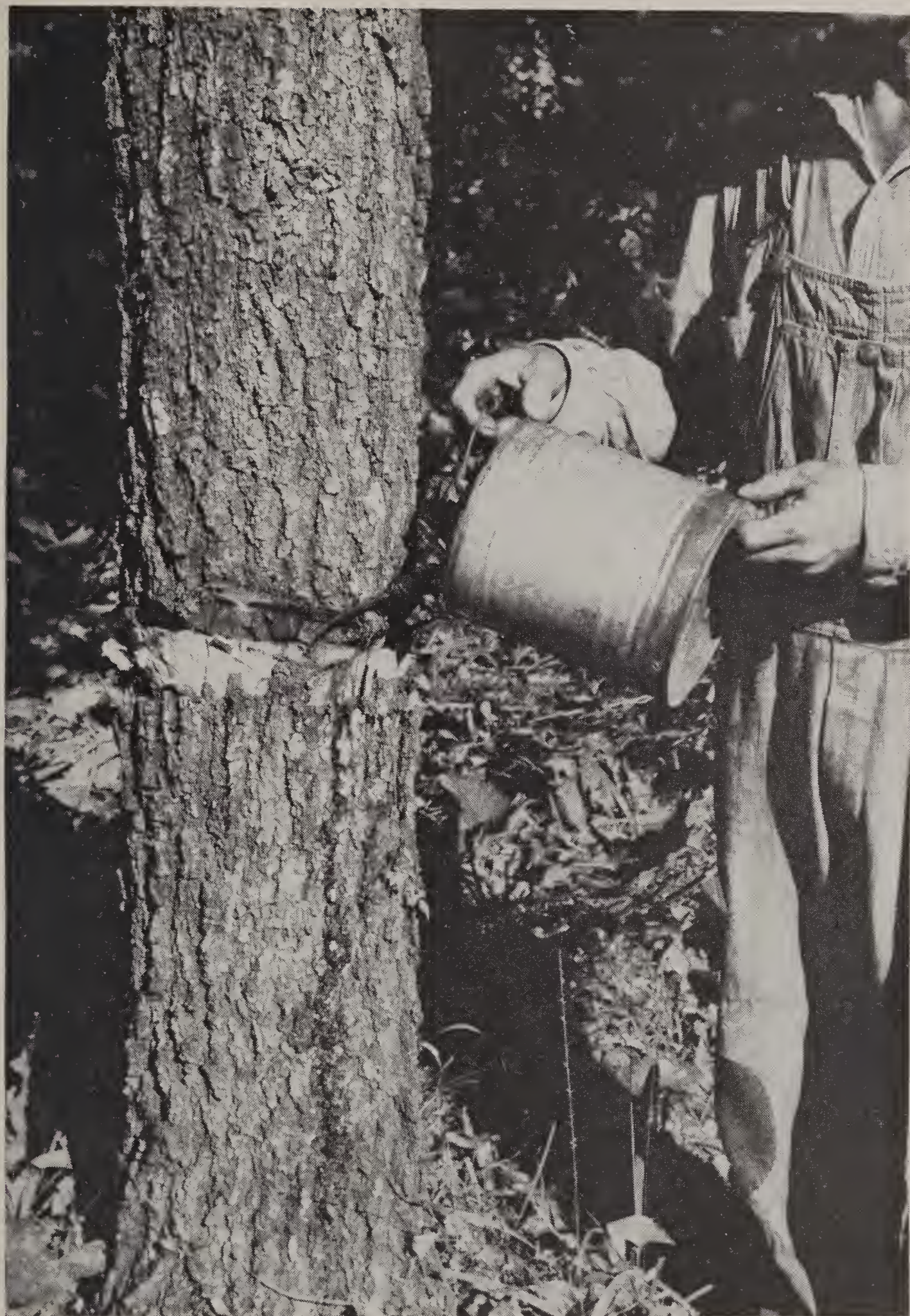
Ammate crystals in cups	Ammate solution in frills
COST	
<i>Chemical.</i> —At 18 cents per pound, Ammate for treating a tree 10 inches in diameter with five cups costs 2.8 cents, or 0.56 cent per cup.	<i>Chemical.</i> —At 18 cents a pound for Ammate, a gallon of 32.4 percent solution costs 58 cents. A tree 10 inches d.b.h. can be treated for about 1.5 cents, or 0.15 cent for each inch in diameter. One gallon will treat 40 trees averaging 10 inches d.b.h.
<i>Labor.</i> —At 60 cents an hour for labor, the cost of cupping and applying Ammate to a tree 10 inches in diameter is 2 cents, or 0.4 cent per cup.	<i>Labor.</i> —At 60 cents per hour, the labor cost is 1.5 cents for frilling and applying the chemical to a 10-inch tree, or 0.15 cent for each inch in diameter.

A cup (fig. 2) is made by taking two downward ax strokes, one above the other, and prying out the chip. For best results, cups should be as near the ground as possible—on the main roots if these show. Cups may also be made 2 or 3 feet up the trunk, but then the tree top dies more slowly than with low cups, and sprouting is greater.



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FIGURE 2.—These cups are well made, but for very best results in preventing sprouting they should be even closer to the ground.



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FIGURE 3.—Pouring Ammate solution into a frill. The frill method is cheaper than cupping and works better on trees more than about 12 inches in diameter. Frills, however, allow more sprouting than low cups do. The dark stain on the freshly cut wood is from red dye added to the solution to help the user tell poisoned frills from untreated ones.

A frill, sometimes called a ring or girdle, is cut around the tree at any easy chopping height (fig. 3). It is made by a single line of overlapping downward ax cuts that go through the bark and a little way into the sapwood. For trees more than about 12 inches d. b. h., the frill method is more effective than the cup method. With cups, the chemical must do the whole job of killing, and the dosage may be too small to be completely effective. But a good frill will itself kill the tree crown in time, and Ammate solution hastens the death—and also reduces sprouting.

To keep down sprouting, the poisoned trees should be left standing for at least a year. Ammate solution is absorbed by the tree almost immediately, and crystals within 24 or 36 hours, but the poison works for 12 months or more.

A way of clearing land is to cut the trees off close to the ground and immediately apply Ammate crystals to the outer sapwood of the stump top to prevent sprouting.

ON SMALL TREES

Trees too small to cup or frill should be cut down close to the ground, leaving a V-shaped stump (fig. 4). One tablespoonful of Ammate crystals should be applied immediately to each freshly cut stump. Sprouting should not be serious, especially if treatment is in summer, fall or winter.



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FIGURE 4.—Small trees can be cupped or frilled, but it is often easier to chop them down. A tablespoonful of Ammate crystals placed on the stump top immediately after felling will prevent serious sprouting.

ON SPROUTS AND BRUSH

Sprouts and brush are harder and more expensive to kill than larger trees. They can be controlled by spraying the green leaves thoroughly with a 32.4 percent solution of Ammate (4 pounds of crystals per gallon of water), preferably in late spring. The kill is better if the stems as well as the leaves are sprayed. Any good pressure spray gun can be used. The common 3-gallon type is convenient for small patches of sprouts. Let the sprouts stand for a year after spraying.

WHERE TO BUY AMMATE

Ammate crystals can be purchased at large seed stores, farm supply stores, drug companies, and through agricultural cooperatives. The costs of poisoning given in table 1 are based on a price of 18 cents per pound. In lots of 350 pounds or more, the cost is usually less than this, but in small amounts it is more.

PRECAUTIONS

Ammate is very corrosive. The spray gun should be cleaned promptly and thoroughly after each use. Rinse it first with clean water to which lime has been added, then oil the metal parts with lightweight lubricating oil. Other metal equipment should also be rinsed thoroughly. Prolonged handling of Ammate may irritate the skin. Workmen should avoid wearing wet gloves and clothes which have been dipped in Ammate solution or on which Ammate crystals have been spilled.

Ammate is likely to injure or kill any vegetation it touches. Do not spill or spray it on desirable plants.

Before much time or money is spent in applying Ammate to trees other than those listed or in areas other than the southern pine-hardwood uplands, the dosage and methods of application should be tested on at least 10 trees. If the trees are poisoned in fall or winter, an examination in the middle of the following summer should tell if the poison will work. If the poison is applied in spring or summer, results cannot be judged accurately until midsummer a year later.

